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(Return to WM, 623-SS)

Dinesh Gupta
U.S. Nuclear Regulatory Commission
Division of Waste Management
Washington, D.C. 20555

"NRC Technical Assistance
for Design Reviews"
Contract No. NRC-02-85-002
FIN D1016

Dear Dinesh:

Enclosed is a copy of our trip report for the 18 December meeting. The report includes our understanding of the agreements on continuing work on Task Order No. 002, Task 2 (Thermomechanical Analysis), Task Order No. 003, Task 2 (Systems, Structures and Components for the NNWSI Repository), and Task Order No. 002, Task 1, Subtask 2 (Review Approach to the NNWSI SCP). We would appreciate learning of any problems or disagreements you notice in our proposed further approach.

Sincerely,

Loren J. Lorig

cc: D. Tiktinsky

Encl.
ljl/ks

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ITASCA TRIP REPORT

DATES: 19 December 1986

LOCATION: U.S. Nuclear Regulatory Commission (Silver Spring, Maryland)

PURPOSE: Presentation of Current Status on Task Order No. 002, Task 2 (Thermomechanical Analysis), Task Order No. 003, Task 2 (Systems, Structures and Components for the NNWSI Repository), Task Order No. 002, Task 1, Subtask 2 (Review Approach to the NNWSI SCP)

ATTENDEES: J. Daemen and L. Lorig (Itasca)

PREPARED BY: J. Daemen and L. Lorig

SUMMARY

Summaries of the current status of the tasks cited above were presented to the NRC. Comments and guidance for further work have been received from the NRC. Agreements on some items, identified below, have been reached.

Review Report on Present Status of Repository Thermomechanical Analysis

An overview has been presented of current capabilities for thermomechanical repository analysis. The presentation generated numerous valuable comments as well as suggestions for additional work. A few (minor) needs for corrections have been identified. The latter will be incorporated into the final report. It may be possible to incorporate some additional suggestions discussed during the meeting. Inclusion of all of them, especially the major ones, would require a significant task expansion.

Systems, Structures and Components Important to NNWSI Repository Performance

The draft item list has been accepted by NRC, subject to a few additions. The methodology for prioritizing the list items has also been accepted. The prioritization will proceed on the basis of engineering judgement. The criteria to be used for prioritization are radiological safety and waste isolation, focused on problems that require site characterization.

It has been agreed that the next draft for NRC review will be forwarded after this task is about 60% complete.

Suggested Review Approach to In-Situ Testing at Yucca Mountain

Section 8.3.2 (Planned Tests, Analyses, and Studies — Repository)

Section 8.3.3 (Planned Tests, Analyses, and Studies — Sealing)

The following common outline is to be used for both sections:

- I. Areas of Review
- II. Acceptance Criteria
 - A. Basic Acceptance Criteria
 - 1. Regulatory Requirements
 - 2. Regulatory Guidance
 - B. Specific Technical Criteria
- III. Review Procedures

A number of shortcomings common to both documents in their present status have been identified and the following remedial action has been agreed upon.

I. Areas of Review

All sections of the "Annotated Outline for SCPs (Revision 4, 2-15-85)" that need to be reviewed will be specifically identified. It is proposed that the review need be briefly justified (explained).

II. Acceptance Criteria

A. Basic Acceptance

This section will be comprised of two parts: regulatory requirements and regulatory guidance. The first will consist of relevant 10 CFR 60 sections; the second will consist of relevant GTP and regulatory guide sections.

The 10 CFR 60 sections quoted will be reviewed in detail and some previously overlooked ones will be added in order to ensure precise focusing on SCP requirements. The regulatory guidance section will be based on the appropriate GTPs, on Regulatory Guide 4.17 and on other documents where deemed appropriated by NRC.

B. Specific Technical Criteria

Specific technical criteria will be based on the regulatory requirements and regulatory guidance. In essence, this section will identify the technical criteria that needs to be satisfied by the SCP. This will be based largely on Regulatory Guide 4.17 and on relevant GTPs.

III. Review Procedures

This section will discuss how the SCP is to be reviewed in order to ascertain that all acceptance criteria are satisfied. It is proposed that this section will follow directly the annotated outline for the SCP and provide guidance and procedures as to how each section of the SCP is to be reviewed.

Notes on Suggested Review Approach — Repository Program

Specific areas that need to be addressed include the following.

II. Acceptance Criteria

A. Basic Acceptance Criteria

The regulatory requirements to be included here are:

- (1) 10 CFR 60.17 — Contents of Site Characterization Plan;
- (2) 10 CFR 60.18 — Review of Site Characterization Activities;
- (3) 10 CFR 60.122 — Siting Criteria; and
- (4) Nuclear Waste Policy Act of 1982, Section 113, Site Characterization.

The regulatory guidance items to be included here will be based mainly on Regulatory Guide 4.17, appropriate GTPs, and other documents supplied by NRC, such as meeting notes (e.g., DOE-NRC meeting at Forrestal Building, 7-8 May) and other written agreements.

B. Specific Technical Criteria

The specific technical criteria to be included will be derived largely from Regulatory Guide 4.17 and relevant GTPs.

III. Review Procedures

Most of the material in the present draft under II will be moved to III. The wording of some sections (e.g., p. 8, first paragraph and p. 38, first paragraph) will be revised to reflect the nature of the review document. NRC has agreed to provide marked copies of the draft to address other specific areas.

Notes on Suggested Review Approach — Seal System Program

Specific weaknesses that need to be rectified include the following.

I. Areas of Review

In addition to the specific review areas identified, the supporting areas (sections presently listed under Section 8.3.3.3, p. 17) will be included in this section. Multi-disciplinary review responsibilities (e.g., need for input from other branches) will be addressed.

II. Acceptance Criteria

GTPs will be incorporated (present draft had not yet progressed to this point). Most of the material in present draft under II will be moved to III.

Concluding Remarks

NUREG 0800 format will be followed in detail, including direct quotes from prefatory material (with appropriate modification to adjust for specific repository requirements). A revised draft of the "Suggested Review Approach" documents will be provided for NRC review upon completion of about 60% of the work.

Respectfully submitted,



Loren J. Lorig

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COST BREAK-OUT

Labor

Jaak Daemen	16 hrs @ \$57.75/hr	\$ 924.00
Loren Lorig	12 hrs @ \$19.95/hr	239.40

TOTAL LABOR \$ 1,163.40

Actual Expenses

Travel

Airfare		
(Tucson-WDC-Tucson)		\$ 520.00
Daemen		

(Mpls-WDC-Mpls)		\$ 389.00
Lorig		

Miscellaneous Travel Expenses		
Daemen (parking, taxis)		\$ 5.00
Lorig (car rental, parking)		59.25

Lodging

Daemen		
(2 nights @ \$41.75/night)		\$ 83.50

Lorig		
(2 nights @ \$41.75/night)		83.50

Meals

Daemen		\$ 53.45
Lorig		34.00

Miscellaneous Expenses

Daemen (phone calls)		\$ 4.40
Lorig (phone calls)		14.06

TOTAL EXPENSES: \$1,246.16